Errington Primary School – Calculation Policy

Introduction

This document outlines the calculation policy implemented and followed at Errington Primary School. Mathematics is a tool for everyday life. It is a whole network of concepts and relationships which provide a way of viewing and making sense of the world. It is used to analyse and communicate information and ideas and to tackle a range of practical tasks and real-life problems.

Our calculation policy at Errington Primary school is designed to support the teaching of the National Curriculum (2014); to ensure the children are given the opportunity to develop their mathematical skills in all aspects of mathematics, ensuring progression is clear throughout each year group.

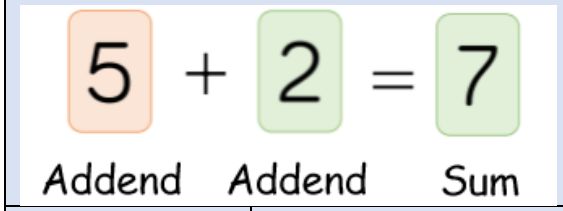
Concrete, Pictorial and Abstract (CPA) approach

At Errington Primary School we recognise that the CPA approach is highly effective in the teaching of Maths to develop conceptual understanding. This approach is recommended to deliver a mastery approach to teaching mathematics. True mastery aims to develop all children's understanding at the same pace. As much as possible, children should access the same learning. Differentiation should primarily be through support, scaffolding and deepening, not through task or learning outcome.

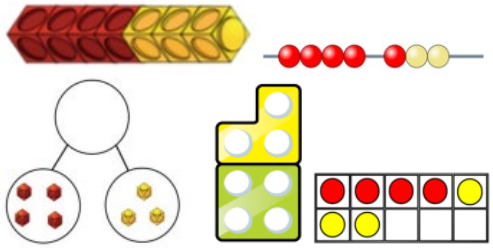
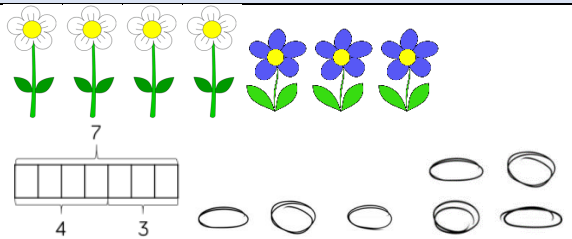
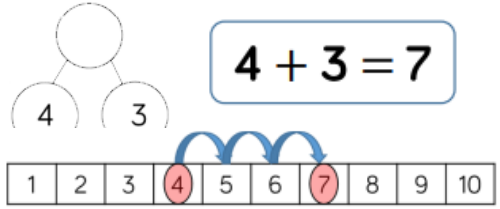
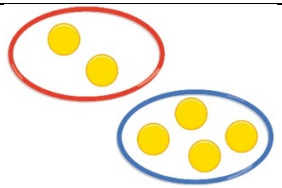
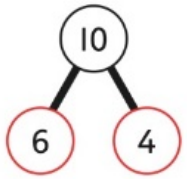
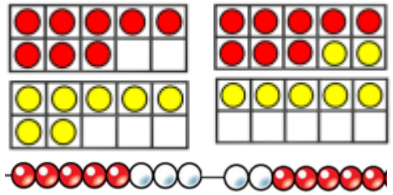
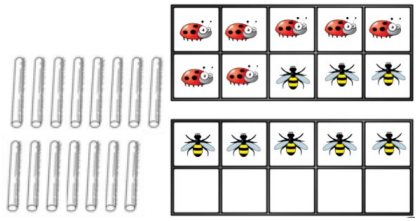
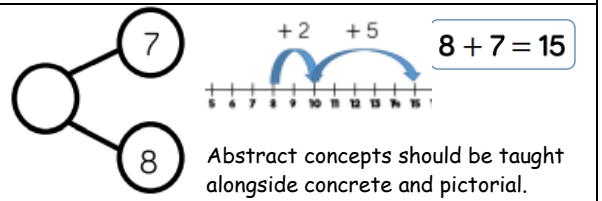
Objects, pictures, words, numbers and symbols are everywhere. The mastery approach incorporates all of these to help children explore and demonstrate mathematical ideas, enrich their learning experience and deepen understanding. Together, these elements help cement knowledge so pupils truly understand what they have learnt.

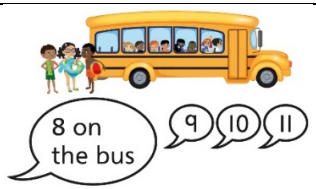
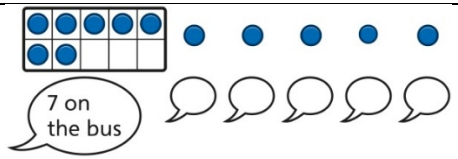
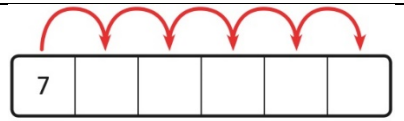
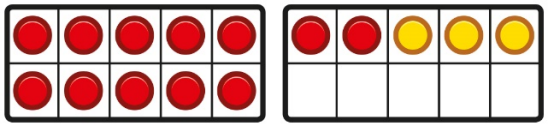
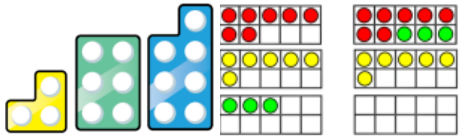
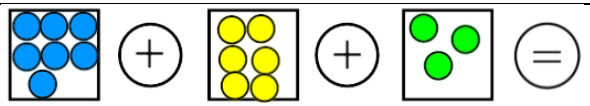
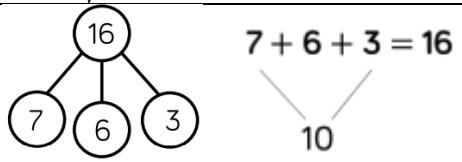
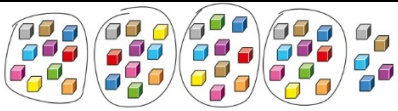
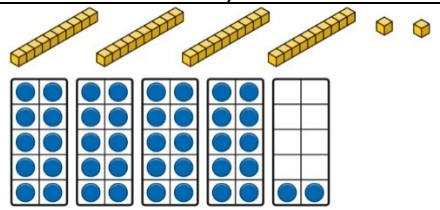
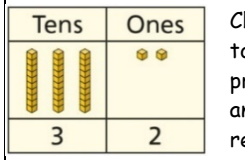
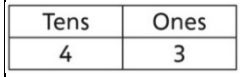
Concrete – The doing stage	Pictorial – The seeing stage	Abstract – The symbolic stage
There is a clear focus on the use of manipulatives and visual images to support understanding. Each new concept or calculation strategy will be introduced using appropriate manipulatives, giving the children a clear picture of the mathematical concept, they are learning.	Once a child has mastered the concrete stage, they can now relate them to representations, such as diagrams or a picture of the problem.	The abstract stage should be completed alongside the concrete and pictorial to ensure children have a visual and deeper understanding of the mathematical concept. Only once children have mastered the concrete and pictorial alongside the abstract should concrete manipulatives and pictorial representations be removed.

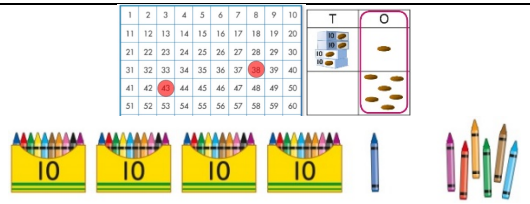
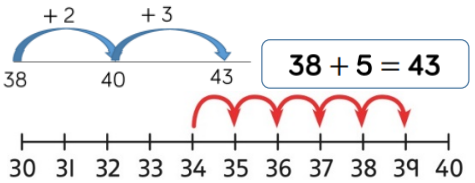
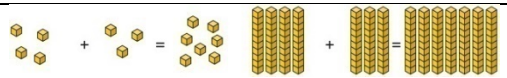
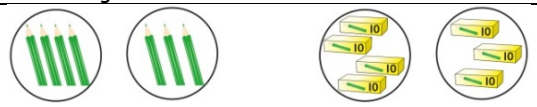
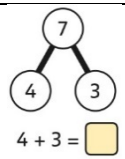
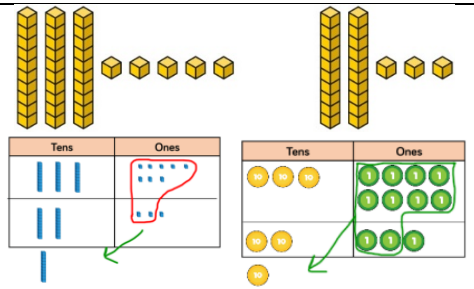
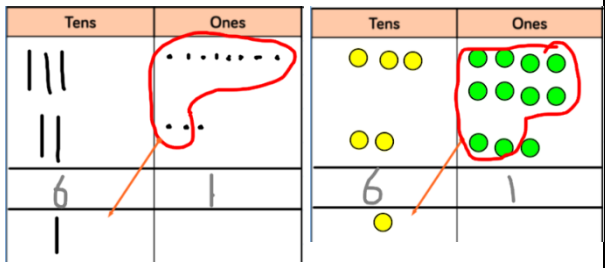
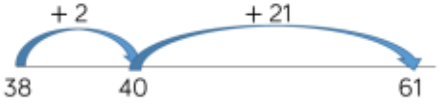
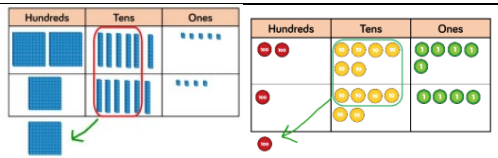
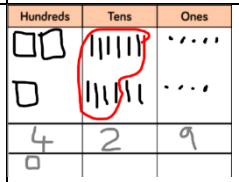
Addition

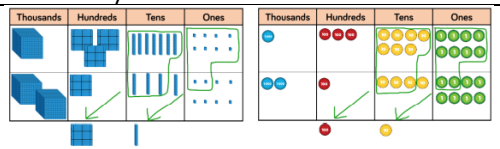
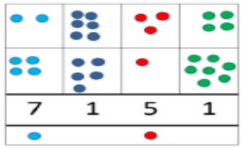
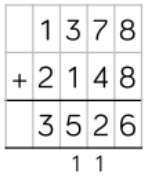
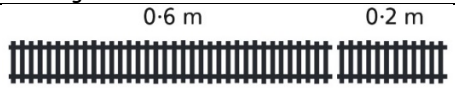
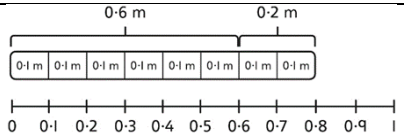
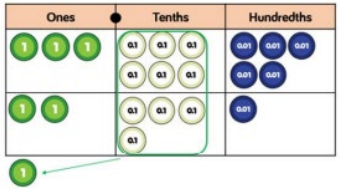
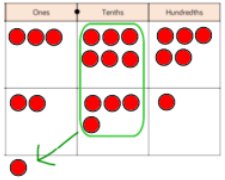
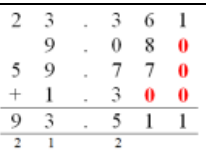


Key Vocabulary: Sum, total, parts and wholes, add, altogether, more, equal to, same as.
Addend – A number to be added to another.
Sum – The result of an addition.
Commutative – numbers can be added in any order.
Partitioning – Splitting a number into its component parts.

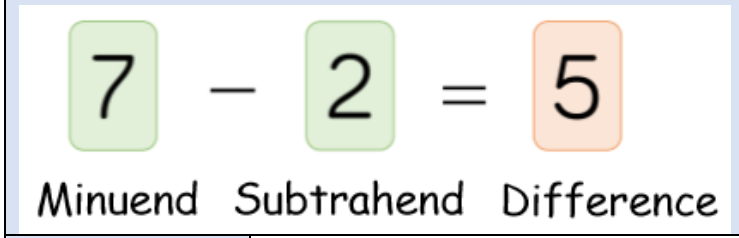
	Concrete	Pictorial	Abstract
Add 1-digit numbers within 10. Number stories will be used to link learning to real life situations to develop understanding before abstract representations are given.	 Use a variety of words when introducing addition (add, altogether, plus, __more etc). A variety of representations should be used when introducing addition.	 Jenny has 4 white flowers and 3 blue. How many does she have altogether? Children can draw circles or images to help them add before moving onto the abstract method.	 Abstract concepts are introduced alongside concrete and pictorial representations. Children should be taught to count on using a number line and using their fingers after been shown this concretely.
Understanding the part whole model Part whole models are useful to learn number bonds. They are also great for missing numbers and First, then, now stories.	 The parts are 2 and 4. The whole is 6. Part whole models should be used alongside first, then and now stories. First I have 2 children, then 4 more come. Now I have 6 children.	 Children draw the parts. The parts are 3 and 4. The whole is 6.	 6 + 4 = 10  Children should be shown part whole models abstractly alongside concrete and pictorial representations. They can use part whole models to show missing numbers. 6 + __ = 10. My whole is ten so the parts must be 6 and __.
Add 1 and 2-digit numbers to 20.	 When adding two numbers bridging 10 it is important to highlight the bond to 10 with jumps on a number line or bead string. This can also be done with a tense frame.	 7 + 8 = 8 is made up of 3 and 5. 7 + 3 gives me 10, add on the 5 to make 15.	 Abstract concepts should be taught alongside concrete and pictorial. When using a number line, this should be shown with a bead string so children can see how the number has been split into two parts when jumping to the next 10.

Add by counting on The big number goes in your head and count on with your fingers.	 8 children are on the bus, 3 more get on. This would be done by acting it out.	 Children can draw circles when counting on. They start with the 7 and draw 5 more to show 7 add 5.	 7 + 5 = ☐ A blank partial number line can be used for children to fill in to help support counting on once this has been mastered concretely.
Adding 1s Make links between patterns in number when adding 1s.	 I know that 2 + 3 = 5 So 12 + 3 = 15 Children should use a range of concrete materials such as bead strings, tens frames and numicon. When dicussing the links ask the children to identify the differences and similarities between the number sentences and asnwers.	 Children can draw circles on tens frames to help represent the link.	2 + 3 = 5 12 + 3 = 15 Children shoukd be shown the links between the number bonds we use to help us work out larger problems. Ask the children what has changed and what has stayed the same. Show this using place value charts and ensure children use the language the tens has changed because… the ones have stayed the same because.
Add three 1-digit numbers.	 Children will be encouraged to identify bonds to 10 or doubles to add more efficiently. Using numicon and tens frames are best to use when adding three small numbers as they highlight doubles and number bonds to ten well.	 Children can draw circles to represent the numbers. They can then count the circles to help them add the three numbers together. However, at this stage, children should be encouraged to use mental methods and to first identify the number bonds to 10 or double numbers to help them solve the addition quicker. They can also use tens frames to draw circles so they can see the number bonds.	 Children should identify the bonds to 10 then add the remaining number to increase speed and accuracy.
Understanding tens and ones.	 Group objects into tens and ones.  Bundle groups of ten to understand unitising.	 Children can draw 2-digit numbers on tens frames and can draw diennes as sticks and circles to represent the tens and ones.	  Children should use place value grids to represent numbers. First using practical apparatus like the diennes and then onto a abstract representation of digits.

Add 1-digit and 2-digit numbers	 When adding a 2-digit number to a 1-digit number, children should be encouraged to count on from the laager number. They should be taught that addition can be done in any order but that it is quicker and easier to count on from the larger number. Children can use place value counters and dienes to add numbers on a place value chart. They should be encouraged to use known bonds to support adding a 1-digit number to a 2-digit number.	 Children can draw pictures when adding. For example, I have 41 crayons and find 6 more. How many do I have? Children can draw the additional crayons. This will highlight that there are 4 tens and 7 ones altogether. Children should use number squares and draw the jumps from the larger number.	 Abstract concepts should be shown alongside the pictorial and concrete. Children should draw jumps on number lines and again be encouraged to use known bonds to improve efficiency and accuracy.
Use known bonds to add tens.	 If 4 + 3 = 7 then 40 + 30 = 70	 Children can draw pictures to represent the numbers. They should be encouraged to use the known bond. If 4 + 3 = 7 then 40 + 30 = 70. They can then count in tens to show this.	 If 4 + 3 = 7 40 + 30 = ___
Adding two 2-digit numbers	 Children should use dienes and place value counters to add two 2-digit numbers. In the early stages this should be done alongside a portioned column method then moving onto the formal column method. Children first partition the numbers into tens and ones and represent these on the place value grid. Children first add the ones and exchange ten ones for one 10 if needed. This is place under the answer box. The ones column is then added together including the ten below the answer box.	 Children can draw a pictorial representation of the columns and dienes or place value counters to further support their learning and understanding.	30 + 8 20 + 3 60 + 1 10 38 + 23 61 1 Children should be shown the abstract method alongside the concrete and pictorial. Children start by partitioning the numbers before moving on to clearly show the exchange below the addition. This ensures that children understand the place value of each digit and have a better understanding of the exchange. The column addition method should not be introduced until year 3. Children should also be shown addition of 2-digit numbers on a number line. Children start the number line at the biggest number. They then jump to the next ten then have one large jump of the remaining amount. 
Adding 3-digit numbers.		  Children can draw the dienes or place value counters to support	265 + 164 429 1 Children should use the concrete method alongside the abstract to support understanding before moving onto the abstract method alone.

	Base 10 and counters are to be used when adding 3-digit numbers. Ensure children write their calculation along side so they see the connections.	their learning. Pictures can be used to support understanding.	
Adding 4-digit numbers and above.	 Always begin with showing the concrete method along side the abstract to ensure understanding especially where exchanges occur.	 Children can draw counters in a place value table.	 1,378 + 2,148 = 3,526
Adding tenths	 Link measure with addition of tenths. Two lengths of fencing are 0.6m and 0.2m. How long are they when added together?	 6 tenths add 2 tenths. Children can draw a bar model to represent the tenths. Children can use a number line as shown above and add the jumps needed.	0.6 + 0.2 $\frac{6}{10} + \frac{2}{10} = \frac{8}{10}$ When showing the abstract number sentence, a link can be made with fractions.
Adding decimals	 When adding decimals place value counters should be used. Children should have a good understanding of adding money and coins can be used to support when adding numbers with 2-decimal places.	 Children can draw the place value counters on a grid to support their learning.	3.65 + 2.41 6.06 1  Place value counters should be used to teach adding decimals. The place holder 0 should be used to help children organise the numbers into the correct columns.

Subtraction



Key Vocabulary: take away, less than, the difference, subtract, minus, fewer, decrease, reduce

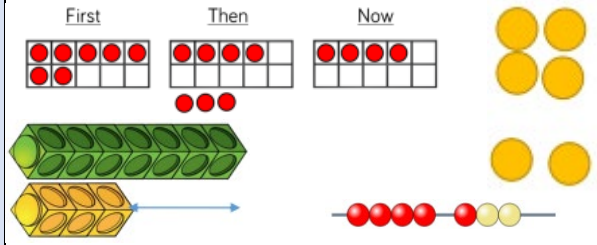
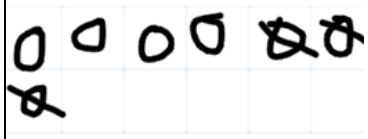
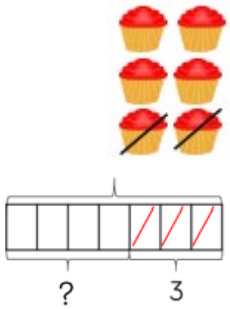
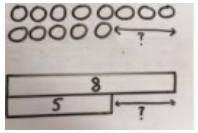
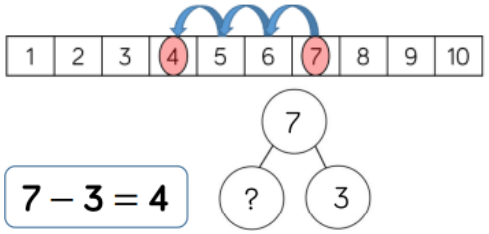
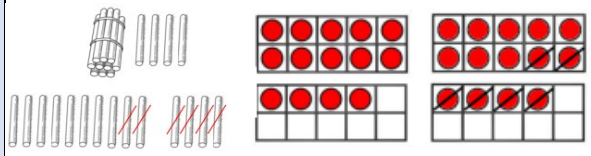
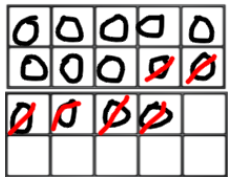
Exchange – Change a number or expression for another of an equal value.

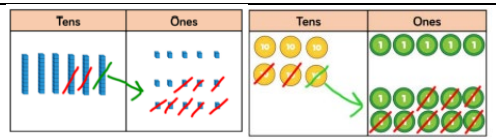
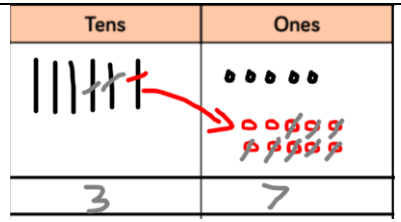
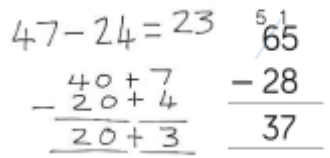
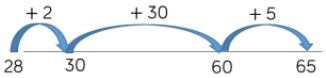
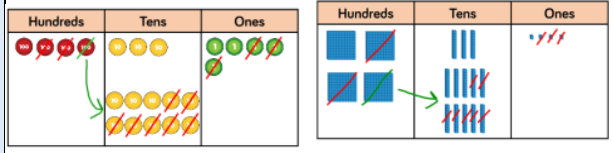
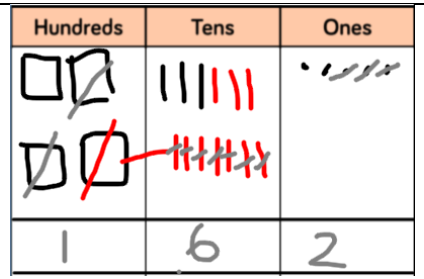
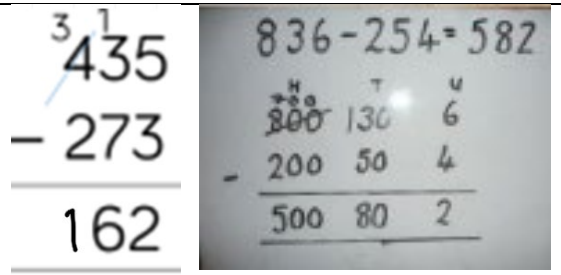
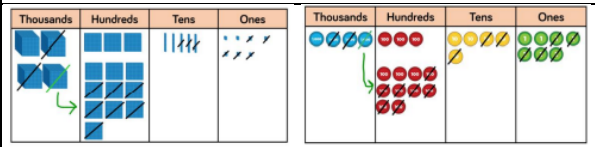
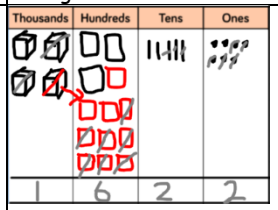
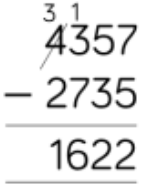
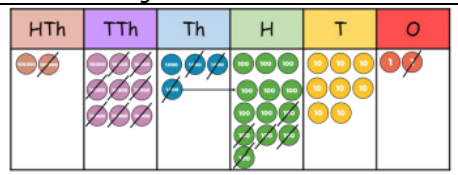
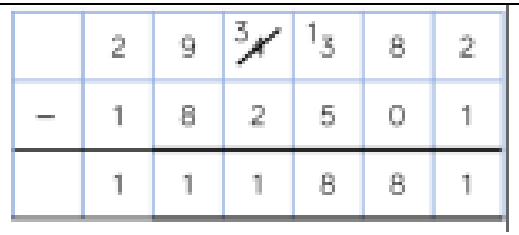
Minuend – A quantity or number from which another is subtracted.

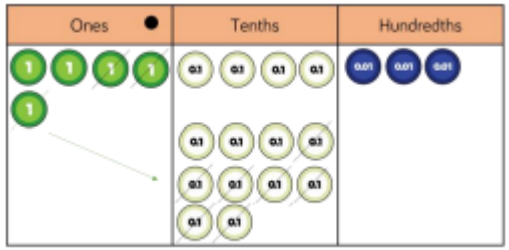
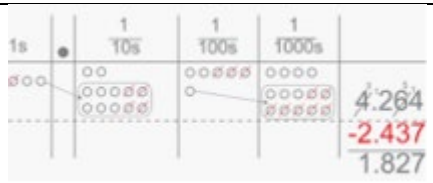
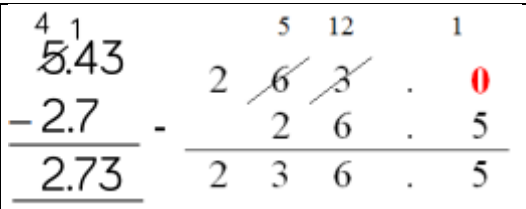
Reduction – Subtraction as take away.

Difference – the numeral difference between two numbers found by comparing the quantity.

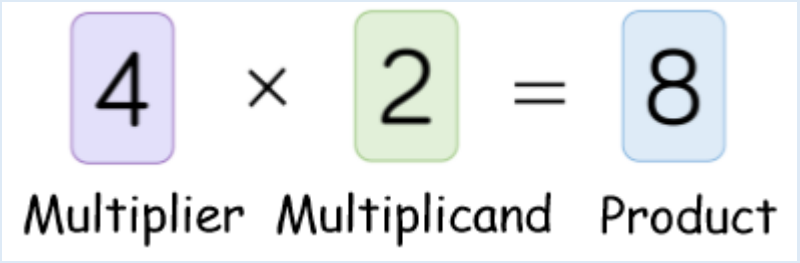
Subtrahend – A number to be subtracted from another.

	Concrete	Pictorial	Abstract
Subtract 1-digit numbers from 10 Children need to find the difference and reduction within numbers.	 Lots of physical objects should be used to show how objects can be taken away. Number stories should be told alongside this using a range of vocabulary. Tens frames and bead strings are useful to find reductions (how many left). Cubes and bar models are useful when finding the difference (how many more).	 Children can draw circles or pictures to help them subtract. 7 – 3 = Children draw 7 circles and then cross out 3.   When finding the difference bar models are useful to draw as children can see the difference clearly.	 Abstract representations should be introduced alongside pictorial and concrete representations. Part whole models should be used with objects first. Children start with 7 counters as this is the whole. They place 4 in one part. There is 3 left which tells them 3 is the other part. This can also be used to solve missing problems. 7 - __ = 4 or 4 + __ = 7
Subtracting 1-digit and 2-digit numbers to 20.	 When beginning to subtract from a 2-digit number it is important to highlight that one ten is equal to ten ones. Children should be encouraged to find the number bond to 10 when partitioning the subtracted number. Tens frames and straws are useful for this.	 Children can draw circles and cross these out when subtracting. The relationship between number bonds should be pointed out. 6 is made up of 4 and 2. We can take away the 4 from 14 to give us ten and then the 2 from 10 to give us the answer.	 Children should be shown abstract representations alongside the concrete and pictorial. Images can be drawn above the number line and these crossed out before children jump back on a number line. This will help them to understand further. Use number stories to help children what is happening when we subtract and find the difference.

Subtract 1-digit and 2-digit numbers to 100.	 Using dienes and place value counters are useful when subtracting as they show clearly the exchange which helps further the children's understanding. Children begin by making the minuend using place value counters or dienes and placing this on the place value chart. Children then take away the ones. If there are not enough ones to takeaway, a ten needs to be exchanged for ten ones. This would be done alongside the abstract method to show clearly the exchange. Children then take away the tens.	 65 − 28 = 37 Children can draw sticks and circles to represent the tens and ones when subtracting to aid their understanding.	 Children should partition numbers to begin when subtracting to ensure understanding before moving onto the column method.  Children should also use blank number lines to count on to find the difference. Encourage children to jump to the next multiple of ten.
Subtract numbers with up to 3-digits.	 Children should use place value counters and dienes when subtracting 3-digit numbers. Children should use the apparatus to make the minuend. They then take away the subtrahend, starting with the ones. If there are not enough ones to take away, a ten should be exchanged. Then children will take away the tens. If there are not enough tens, a hundred should be exchanged for ten tens.	 Children can draw the dienes as squares, sticks and circles to represent the hundreds, tens and ones. Children draw the minuend and then cross out the subtrahend. Children can draw the exchange where needed. This should be done alongside the formal written method.	 Children start the written formal method by partitioning the numbers into clear place value columns. Moving forward children use the column method.
Subtract numbers with up to 4-digits	 Children should use dienes and place value counters to subtract 4-digit numbers.	 Children can draw place value counters or the dienes to support their learning.	 Children should complete the abstract method alongside the concrete and pictorial. Children can move onto the formal written method quickly but only once they have a secure understanding.
Subtracting numbers with more than 4-digit.	 Place Value counters are best to use. At this stage, children should be encouraged to work in the abstract.	Children would move on quickly at this stage to using the column method to subtract. However, if needed, children can draw place value counters to support their learning.	

Subtracting with decimals.	 Children should use place value counters and coins when subtracting with decimal places. Place value is important and place value grids should be used.	 Children can draw the place value counters to support their learning once confident with using the place value counters.	 Children should use the place value holder (0) when needed.

Multiplication



Key Vocabulary: double, times, multiplied by, the produce of, groups of, lots of, equal groups of, factor.

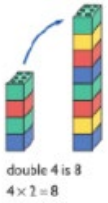
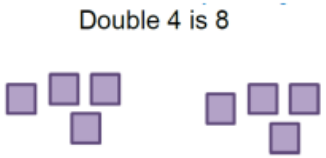
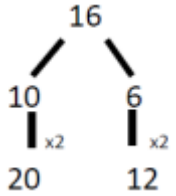
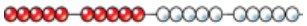
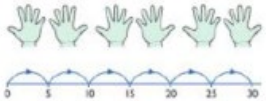
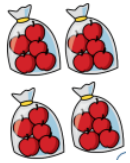
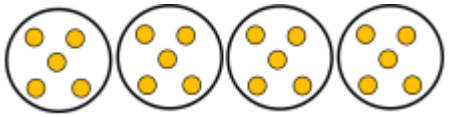
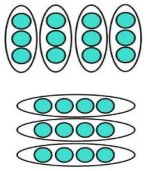
Array – An ordered collection of objects in rows and columns.

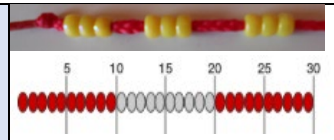
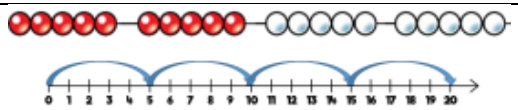
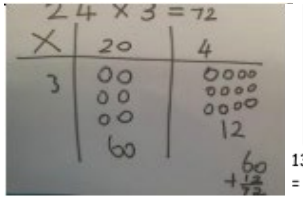
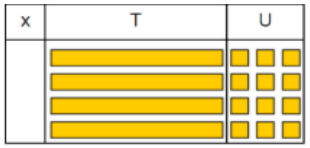
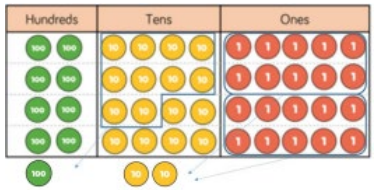
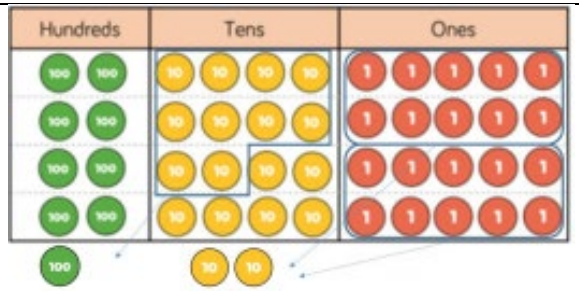
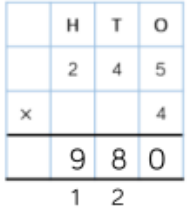
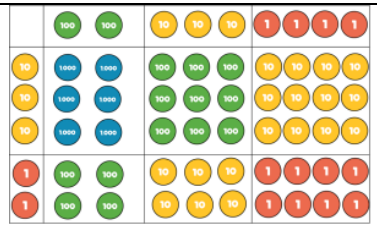
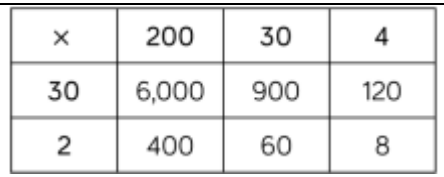
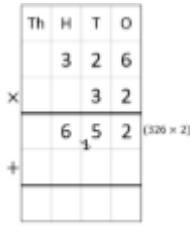
Commutative – Numbers can be multiplied in any order.

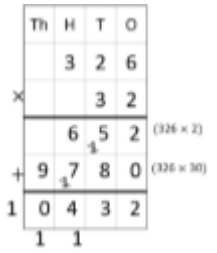
Exchange – Change a number or expression for another of an equal value.

Factor – A number that multiplies with another to make a product.

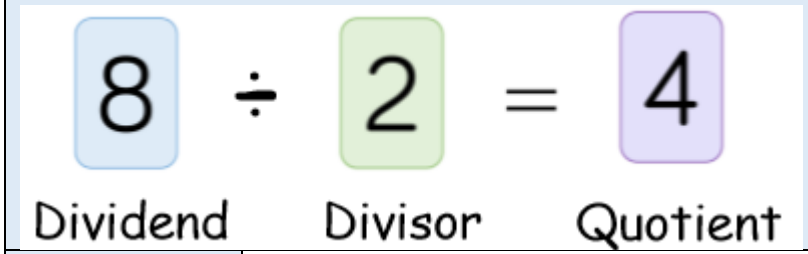
Product – The result of multiplying one number by another.

	Concrete	Pictorial	Abstract
Doubling	 Doubling should be introduced using practical objects such as cubes, counters, numicon ect. Children should also use their fingers to show doubles to 5. They should be taught to understand that doubling a number is the same as adding it to itself or multiplying the number by 2. These links should be made when teaching.	 Children should draw pictures to show doubling a number.	 When doubling larger numbers, a partitioning method should be used. This should be done alongside concrete resources such as dienes.
Counting in multiples	  Children should count in multiples using concrete objects in equal groups.	  Children should use pictures and numberlines to continue support in counting in multiples.	Children should count in multiples aloud. Patterns should be identified and children should be asked what they notice. Number squares should be used to highlight the patterns when counting in multiples. 2 4 6 8 10… 5 10 15 20 25…
Repeated Addition Counting and making equal groups	  Children will count groups of objects and add them together. I have __ lots of/equal groups of ___. I have ___ altogether. In year 1 children should use concrete and pictorial representations and are not expected to record multiplication formally.	  Children should be shown different real-life representations alongside the abstract repeated addition. Children can draw counters in groups and should be shown pictures of objects in groups.	Children should be shown the multiplication and repeated addition alongside the concrete or pictorial to support understanding. 5 + 5 + 5 + 5 = 4 x 5 = 5 x 4 = 4 lots of 5 = 5 lots of 4 =
Making Arrays	 Children should create arrays using counters/objects. Children should write the matching number sentence along side the array. 4 x 5 = I have 4 groups of 5. Children make a group of 5 at a time. Using the same counters, they solve 5 x 4 = to show that multiplication can be done in any order (commutative).	 Children should draw circles to represent the arrays. 3 x 4 = or 4 x 3 = Children can count the circles to find the answer.	3 x 5 = 5 x 3 = 3 + 3 + 3 + 3 + 3 = 5 + 5 + 5 = Children should be shown that multiplication can be done in any order (communitive).

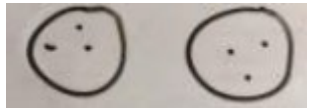
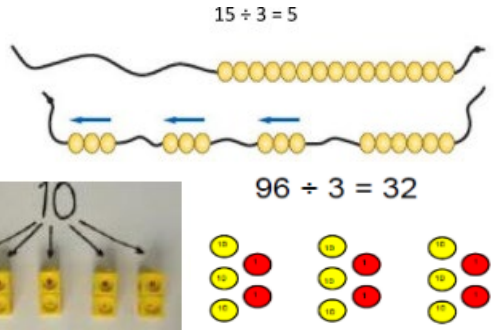
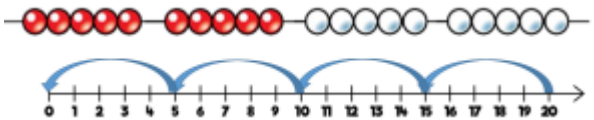
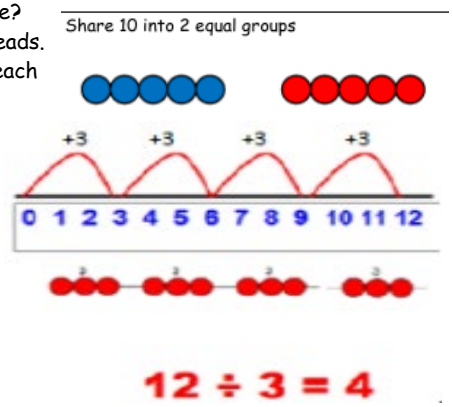
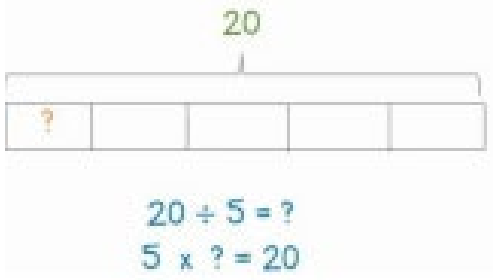
Number Line	 Count the groups as children are skip counting. Show first on a bead string before introducing a number line.	 A number line can be used with the jumps drawn on. A bead string should be used alongside to show the link.	5 + 5 + 5 + 5 = 5 x 4 = 4 x 5 =
Grid method	 34 x 5 First show the links to array using Dienes. Then move onto using place value counters. Explain that we are multiplying by 5 so need 5 rows of 34. The children make 5 groups of 34 then add them together. Using a place value chart will support this.	Pictorial representations can be made by drawing the counters.   13 x 4 = (10 x 4) + (3 x 4) = 40 + 12 = 52	Children should be able to draw the grid method for each multiplication. **Grid method** X 30 6 4 120 24 36 x 4 = X 1000 300 40 2 10 10000 3000 400 20 8 8000 2400 320 16
Short Multiplication	 245 x 4 = Children should use the counters to help support the understanding of multiplication rather than support finding the answer. They should use their multiplication tables to support solving the answer. As children are multiplying by 4, they need 4 rows (lots of/groups of) 245. Using a place value grid will support with the addition.	 Children can draw the place value counters.	 Children start from the one's column. They complete 5 x 4 = 20. They write the 0 in the ones column and place the 2 under the tens. They then solve 40 x 4 = 160 (4 x 4 = 16). As there are 2 tens under, they add this making the answer 180. They write the 8 in the ten's column and the 1 under the 100s. They then complete 200 x 4 = 800 and add the 100 that is under to give them the 9 (900).
Long Multiplication	 234 x 32 =	 Children can draw the counters alongside filling in the grid method box to show the link.	 First, children start by multiplying 326 by the ones. Children start with the ones. 6 x 2 = 12. The 2 goes in the ones column and then the 1 is put in the ten's column. The children then multiply the 2 tens by 2 which equals 4 tens. As there is already a ten in this column, we add the 4 tens and 1 ten which equals 5 tens. Finally, we need to multiply the 3 hundred by the 2 which equals 6 hundred This is placed in the hundred's column. Next, we multiply 326 by the 30. We start by multiplying the ones, 6 x 30 = 180. The 0 is placed in the ones, the 8 in the tens and the 1 in the hundreds. Then, we multiply the tens, 20 x 30 = 600, as there is already a hundred in

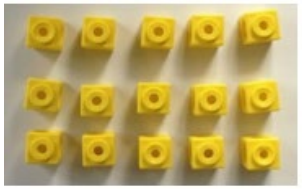
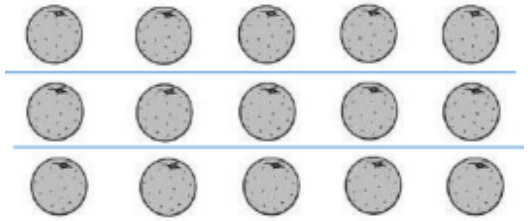
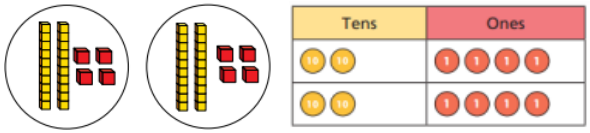
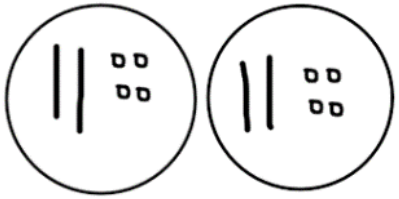
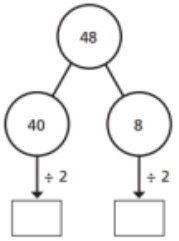
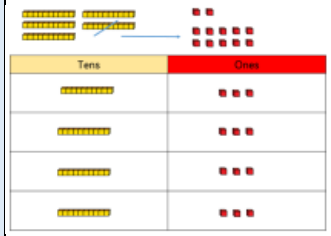
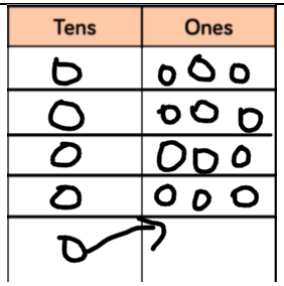
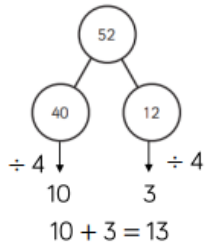
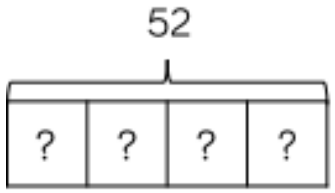
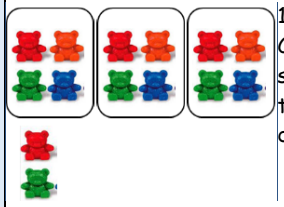
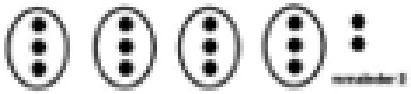
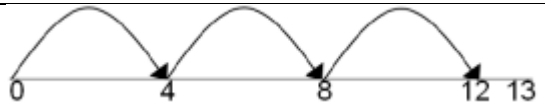
				this column we add this to the 600 which equals 700. The 7 is placed in the hundred's column. Then, we multiply the hundreds, 300 x 30 = 9000. The 9 is placed in the thousand's column. Finally, we add both answers together, 652 + 9780 using the addition column method to find the total answer.

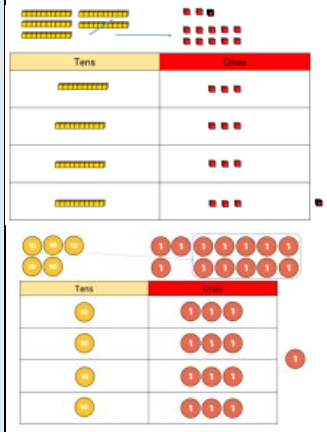
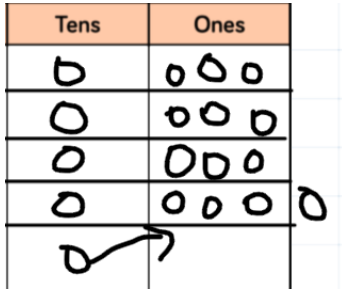
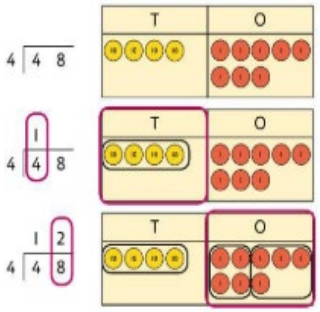
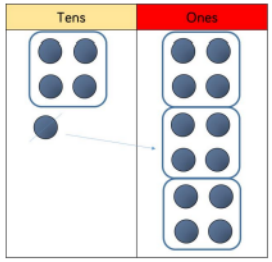
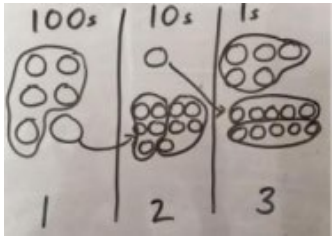
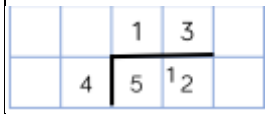
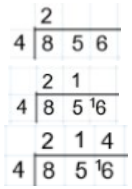
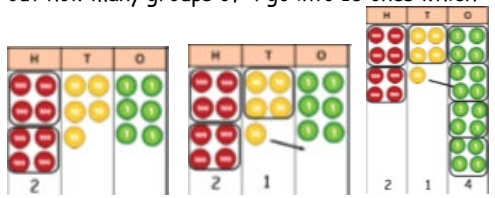
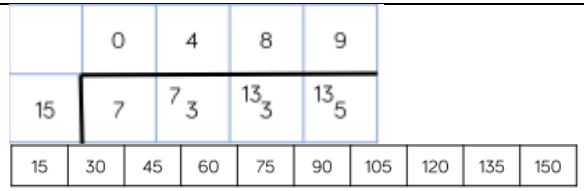
Division

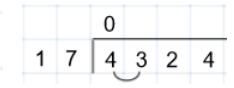
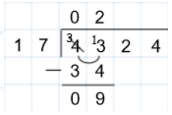
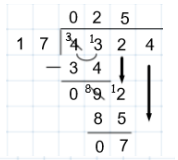
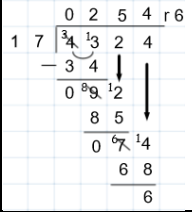


Key Vocabulary: share, group, divide by, half
Dividend – In division the number that is divided.
Divisor – The number by which another is divided.
Exchange – Change a number for another of an equal value.
Quotient – The result of a division.
Remainder – The amount left over.

	Concrete	Pictorial	Abstract
Sharing objects into groups.	 I have 10 cubes. Can you share them equally into two groups? Use real life situations or tell stories to help children to understand the concept of sharing, remind them 'When we share it must be fair'. For example. 'The three little pigs go for a picnic. Can you share the food and plates out for them?' Ask the children would it be fair if one pig had more than another to remind them that we must share equally.	Children can draw pictures to help them share quantities. 6 shared by 2 = There are 6 in total. There are 2 groups. There are 3 in each group. 	6 ÷2 = James has 6 apples. He shares them with his brother. How many apples do they get each? When introducing the abstract, do this alongside concrete representations. 20 ÷ 5 = (There are 20 apples altogether. They are shared equally between 5 bags. How many apples are in each bag? 
Division as grouping (Repeated addition and subtraction)	Divide quantities into equal groups. Use cubes, counters, objects or place value counters to aid understanding. Children will understand the operation and repeated addition or subtraction using bead strings and number lines. 	 Use number-lines alongside a bead string to show the groups/jumps when dividing. 20 shared by 5. Complete jumps of 5 (group 5 beads) until you reach 20. How many groups are there? There are 20 beads. There are 5 in each group. There are ___ groups. 	10 ÷ 2 = Divide 10 into 2 groups. How many are in each group? Think of the bar as the whole. Split it into the number of groups you are dividing by and work out how many would be within each group. Using cubes alongside this works well for children to visually see the whole 20 being split into equal groups. 

Division with arrays	Link division to multiplication by creating arrays and thinking about the number sentences that can be created. E.g.: 15 ÷ 3 = 5 5 x 3 = 15 15 ÷ 5 = 3 3 x 5 = 15 	 Draw an array and use lines to split the array into groups to make multiplication and division sentences.	Find the inverse of multiplication and division sentences by creating four linking number sentences. 7 x 4 = 28 4 x 7 = 28 28 ÷ 7 = 4 28 ÷ 4 = 7
Divide 2-digits by 1-digit (no exchange)	 When dividng larger numbers children should use dienes and place value counters to enble them to split numbers into tens and ones. 48 ÷ 2 = 24	 Children can draw the dienes and place value counters and share these in the number of circles in which we are dividing by.	 48 ÷ 2 = 24 Part whole models provide a written method that matches the concrete representation. This should always be done first using concrete materials with the abstract represented alonside to enable children to visualise and understand.
Division with exchange	 52 ÷ 4 = Children should start with the equipment outside of place value grid. First the children will share out the tens into 4 sections as they are sharing by 4. They will see that they have 1 ten in each group and one ten left over. They would then exchange the ten into ten ones. They would then share the 12 ones evenly between the four rows. They can clearly see that 52 shared by 4 gives them 13 as each row has 13.	 Children can draw the place value counters or dienes onto a place value grid. First the child would split the place value grid into the amount we are dividing by. They would then share out the tens. As they have one left over, they would exchange this for ten ones and share these within the one's column. Children can see that 52 shared into 4 groups is 13 as they have one ten and 3 ones.	  52 ÷ 4 = The part-whole model supports flexible partitioning. Starting with the concrete and moving to the abstract allows children to see how they number can be split easily to solve with mental method.
Division with remainders	 14 ÷ 3 = Children begin in the early stages by sharing out objects in the number of groups we are dividing by.	 Children can draw dots and group them to divide an amount and clearly show a remainder.	 Children can jump forward on a number line than see how many more they need to jump to find the remainder. 53 ÷ 4 = 13r1 53 = 40 + 13 40 ÷ 4 = 10 13 ÷ 4 = 3r1

	 53 ÷ 4 = 13r1 Children can use dienes or place value counters. Children should start with the equipment outside of the place value grid. This will help them to see that there will be a remainder due to it being left outside once all the others have been grouped.	 53 ÷ 4 = 13r1 Children can draw the place value counters or dienes to support their learning.	
Sharing as grouping Bus Stop Method (Short Division)	 Make the dividend using place value counters and place on the place value chart. How many groups of 4 go into 4 tens? 1 group of 4 tens. How many groups of 4 go into 8 ones? 2 groups of 4 ones.  Using this grouping method alongside the short division method helps children to understand why we exchange the one and what this looks like.	  Children can easily draw the place value counters to support their learning.	 The short division method should be completed alongside the concrete. This will show clearly the exchange and how the division is calculated.  856 ÷ 4 =. Children first find out how many groups of 4 go into 8 which is 2. This is placed above the hundreds. Next, we find out how many groups of 4 go into 5 which is 1 with 1 ten left over. The one goes above the tens and the one left over goes next to the ones. Finally, we find out how many groups of 4 go into 16 ones which 
Divide multiple digits by 2-digits (short division).	When children begin to divide upto 4-digits by 2-digits, written methods become the most accurate as concrete and pictorial representations become less effective.		 Children can write out multiples to support their calculations.

Long Division	When children begin to divide upto 4-digits by 2-digits, written methods become the most accurate as concrete and pictorial representations become less effective.		17 34 51 68 85 4324 ÷ 17 =  Children first start by writing the first 5 multiples of 17. This will support them when using long division.  Children then work from the left to the right. How many groups of 17 go into 4. This is 0. We then look at home many 17s go into 43 which is 2. We know this because 17 x 2 is 34. As we need to find out how many is left over, we subtract the 34 from the 43.  After this, we drop down the 2 (20) to make 92 (920). We now find out how many times 17 goes into 92 which is 5 (17, 34, 51, 68, 85). We know we will have some left over so we need to subtract the 85 from 92.  Finally, we drop down the 4 to make 74 and count in 17s to find out how many 17s go into 74 which is 4 (17, 34, 51, 68). To find out how many we have as a remainder we need to subtract 68 from the 74 which is 6. We write the remainder as r6.